

AD-A140 861

19313AT MLRS MISSILE NUMBER 4955 4793 4956 4777 4950  
4792 ROUND NUMBER 55 (U) ARMY ELECTRONICS RESEARCH AND  
DEVELOPMENT COMMAND WSMR NM ATM. D C KELLER 18 JAN 84  
ERADCOM/ASL-DR-1334

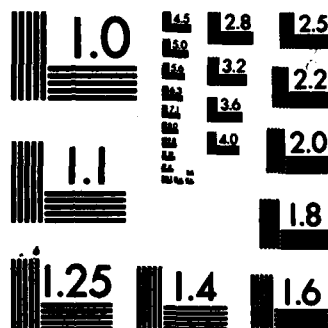
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MICROCOPY RESOLUTION TEST CHART  
NATIONAL BUREAU OF STANDARDS-1963-A

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AD-A140 861

METEOROLOGICAL DATA REPORT

19313AT MLRS

Missile Number 4955, 4793, 4956, 4777, 4950, 4792

Round Number 558/FB-001 thru 563/FB-006

18 January 1984

by

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AVN Number 349-9568

ATMOSPHERIC SCIENCES LABORATORY  
WHITE SANDS MISSILE RANGE, NEW MEXICO

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UNITED STATES ARMY ELECTRONICS COMMAND

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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER DR 1334	2. GOVT ACCESSION NO. <b>A140861</b>	3. RECIPIENT'S CATALOG NUMBER
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19. SUPPLEMENTARY NOTES		
20. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
21. ABSTRACT (Continue on reverse side if necessary and identify by block number) → Meteorological data gathered for the launching of the 19313AT MLRS, Missile Number 4955, 4793, 4956, 4777, 4950, 4792, Round Number 558/FB-001 thru 563/FB-006 are presented in tabular form. ←		

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NTIS GRA&I	
ERIC TAB	
Unannounced	
Justification	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A-1	

## INTRODUCTION

A313AT MLRS, Missile Numbers 4955, 4793, 4956, 4777, 4950, and 4792, Round Numbers 558/FB-001 thru 563/FB-006, were launched from Tula Gate, White Sands Missile Range (WSMR), New Mexico, at 1102:33, 1102:37, 1102:42, 1102:46, 1102:51 and 1102:55 MST, 18 Jan 1984. The scheduled launch times were 1100 MST with a 4.5 second separation.

## DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data obtained by the following methods:

### 1. Observations

#### a. Surface

(1) Standard surface observations to include pressure, temperature ( $^{\circ}\text{C}$ ), relative humidity, dew point ( $^{\circ}\text{C}$ ), density ( $\text{gm}/\text{m}^3$ ), wind direction and speed, and cloud cover were made at the Tula Gate Met Site at T-0 minutes.

(2) Anemometer data were provided from existing tower-mounted anemometers at Tula Gate. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

#### b. Upper Air

(1) Low level wind data were obtained from pilot-balloon observations at:

### SITE AND ALTITUDE

Tula Gate 950 meters  
MAL 2000 meters

(2) Air structure data (rawinsonde) were collected at the following Met Sites.

### SITE AND TIME

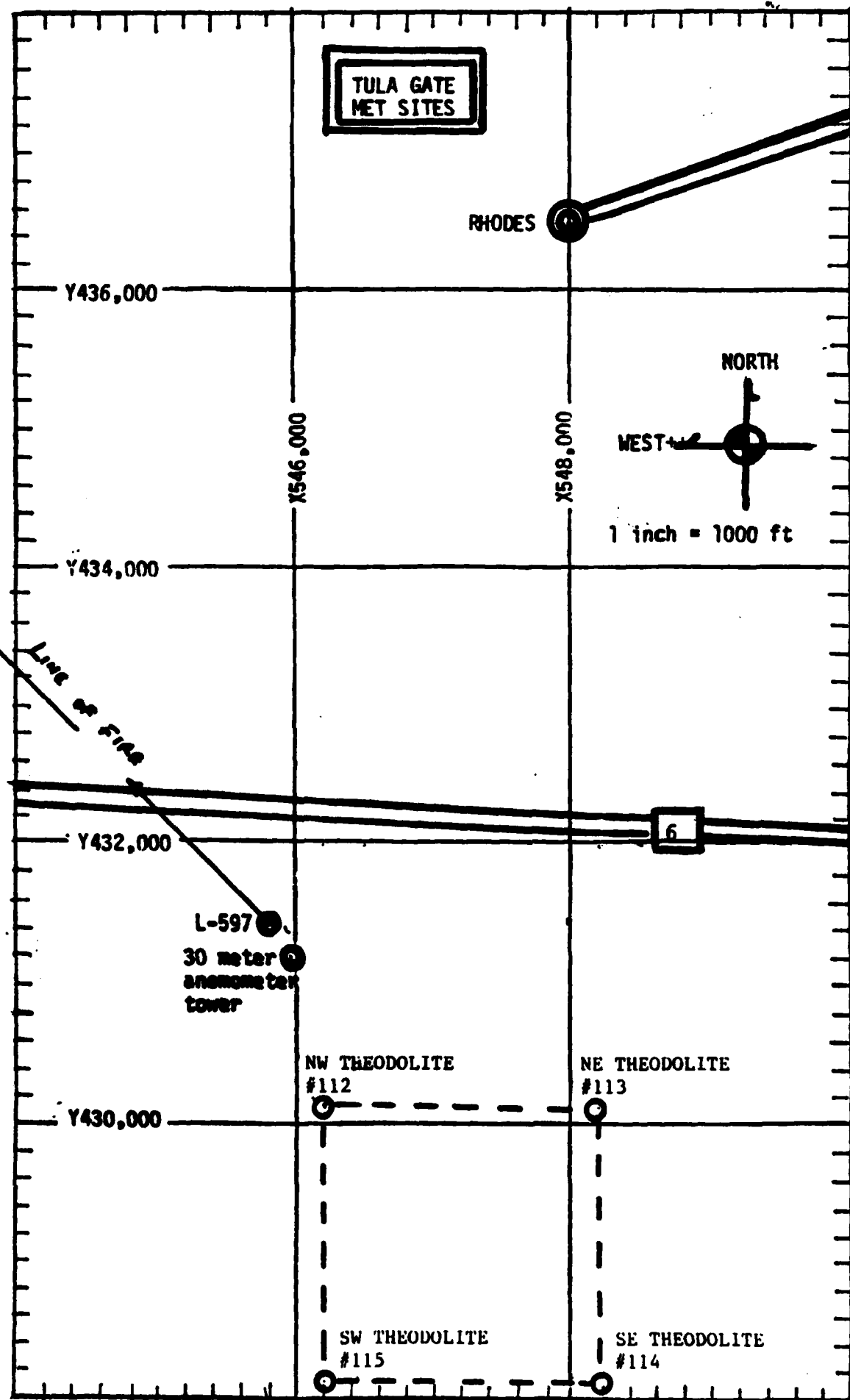
RITA 0945 MST  
LANA 1015 MST  
RITA 1100 MST

A map of the Los Angeles area, showing various locations and landmarks. The map includes a compass rose indicating North and a scale bar from 0 to 10 miles. Key locations marked include:

- STALLION
- CP-7a
- SUCK
- CP-17
- SPEC
- APSMC
- QUIC
- MARRIET
- SOTIM 3
- ZURF
- OSCURA
- SM-70
- SALINAS PEAK
- DENVER
- ML
- DEAD HORSE
- EC-50
- SALT
- SM-50
- TULA GATE
- RITA
- LAMA
- TULA PEAK
- TULA PICAL
- CAT
- HOLLOMAN
- 847
- EC-30
- SLED
- NITSAT
- E28
- POW
- NR-30
- SEENORN
- APACHE
- ARKY
- NICK
- WALT
- NR
- BOON
- SMR
- SMR RKT
- FLOWER
- LC-32
- LC-33
- LC-34
- LC-35
- LC-36
- LC-37
- LC-38
- LC-39
- IONOSPHERE
- C STATION

The map also shows a dashed line representing the "NORTHUP STRIP" and a solid line representing the "RED RIO".





# PROJECT SURFACE OBSERVATION

TABLE 1		STATION <u>Tula Gate</u>																	
DATE 18 Jan 84		X= 545,944.89 Y= 431,158.70 H= 4102.47																	
TIME M S I		PRESSURE mbs		TEMPERATURE OF °C		DEW POINT OF °C		RELATIVE HUMIDITY %		DENSITY gm/m <sup>3</sup>		WIND DIRECTION degs In		WIND SPEED kts		CHARACTER kts		VISIBILITY	
1100		883.0		6.0		-3.3		51				350		08				40	

OBSERVATIONS TO VISIBILITY	CLOUDS						REMARKS
	1st LAYER		2nd LAYER		3rd LAYER		
	AMT	TYPE	HGT	AMT	TYPE	HGT	
							CLEAR

## PSYCHROMETRIC COMPUTATION

TIME:	1100	
DRY BULB TEMP.	6.0	
WET BULB TEMP.	2.0	
WET BULB DEPR.	4.0	
DEW POINT	-3.3°C	
RELATIVE HUMID.	51	

TABLE 2

## ANEMOMETER DATA - 30 Ft Level of 30 Meter Tower

X= 545,944.89 Y= 431,158.70 H= 4102.47 (BASE)

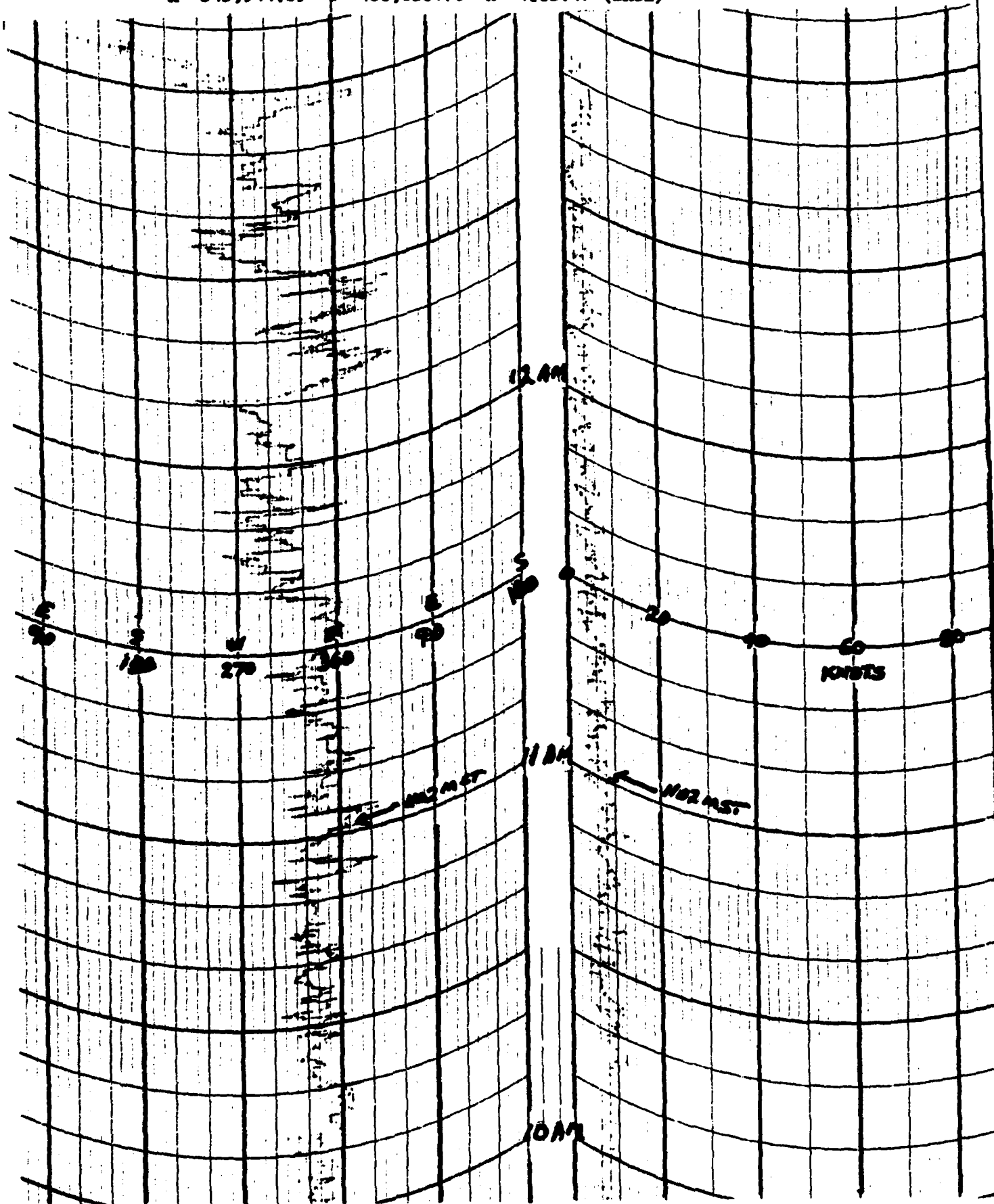


TABLE 3

ANEMOMETER DATA - 60 Ft Level of 30 Meter Tower

X= 545,944.89 Y= 431,158.70 H= 4102.47 (BASE)

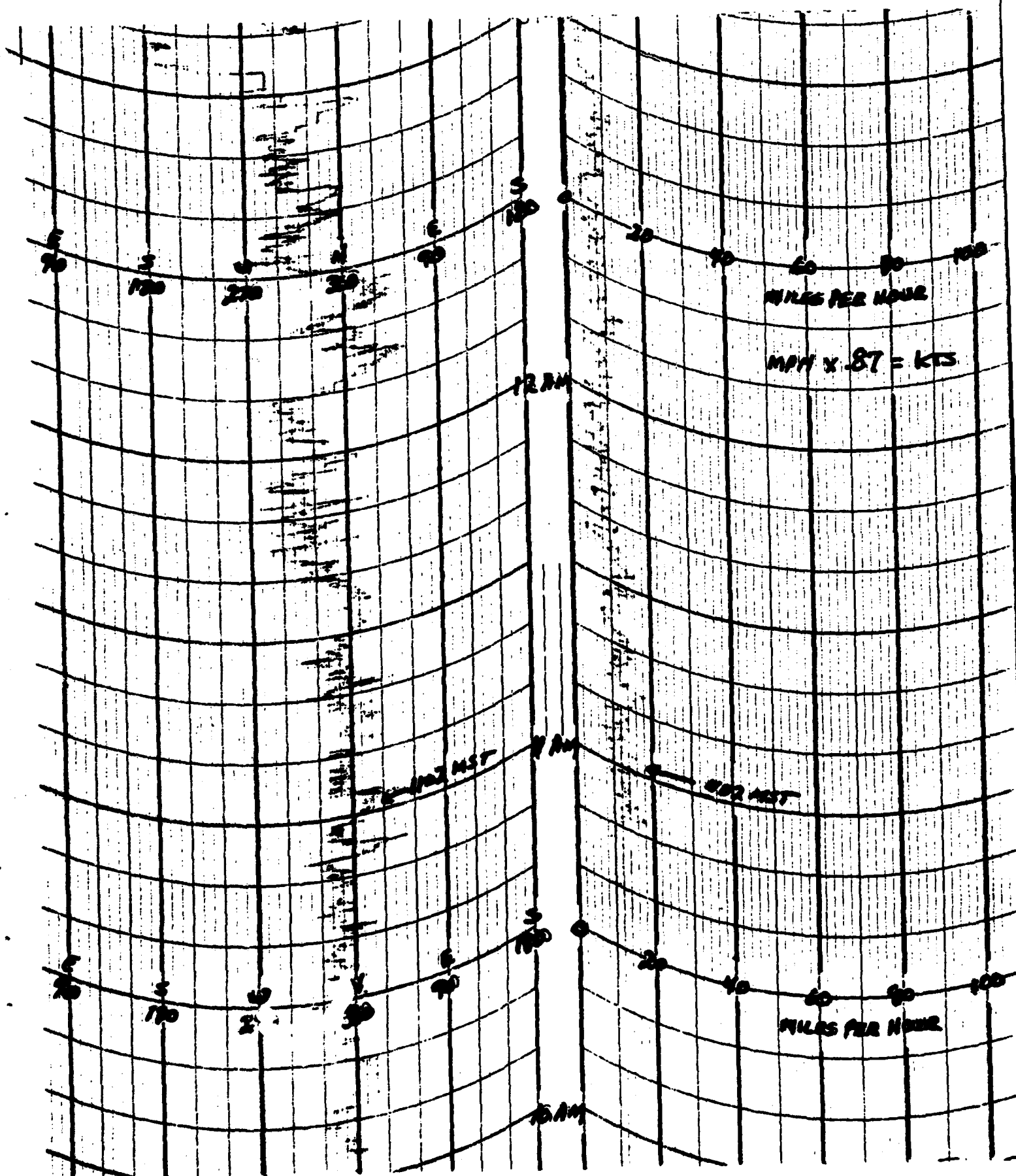
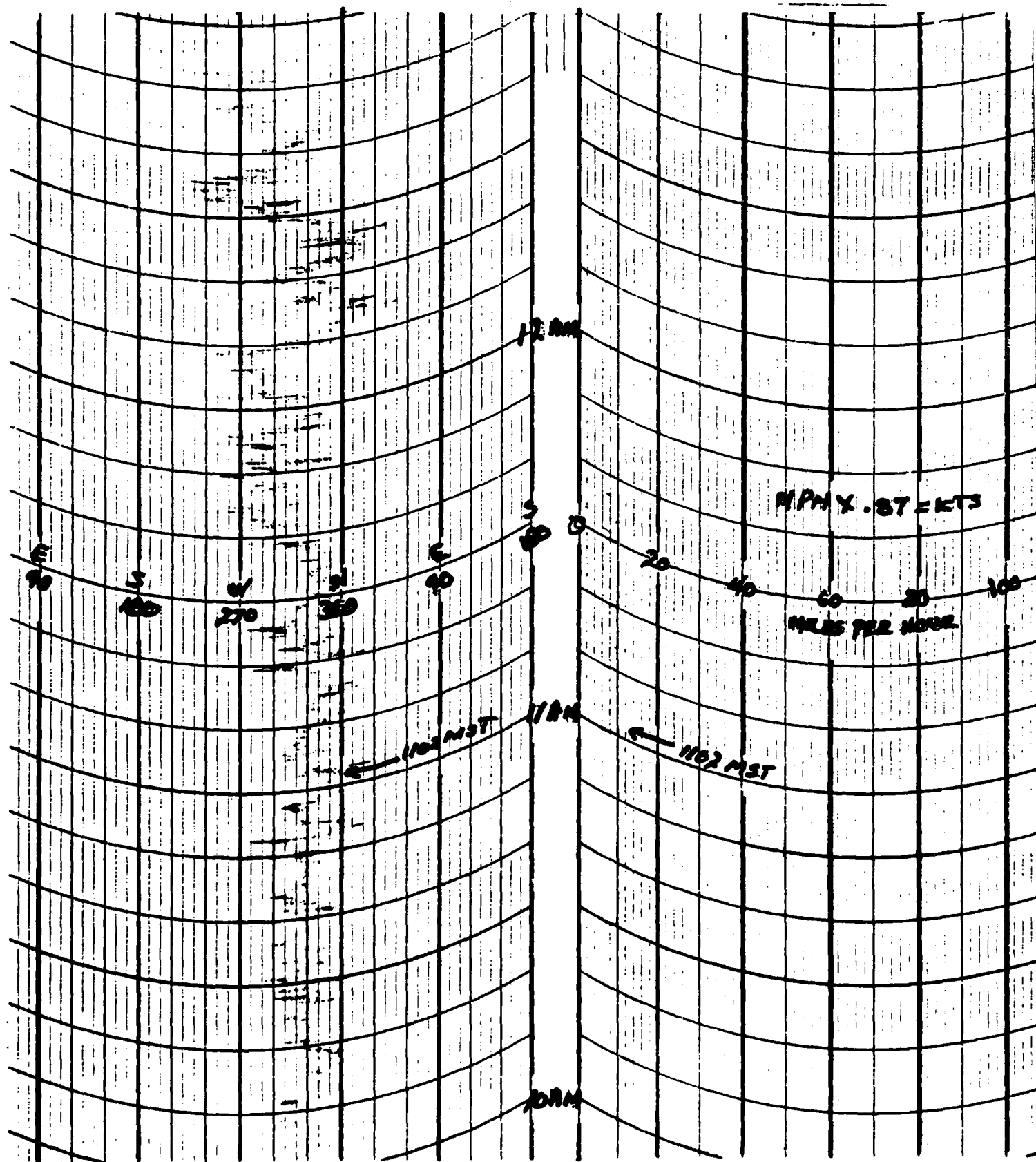


TABLE 4

ANEMOMETER DATA - 90 Ft Level of 30 Meter Tower

X= 545,944.89 Y= 431,158.70 H= 4102.47 (BASE)



## T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 18 January 1984

SITE: Tula Gate

TIME: 1105 MST

WSTM COORDINATES:

X= 545,944.58

Y= 431,158.70

H= 4,102.47

SITE: MAL

TIME 1102 MST

WSTM COORDINATES:

X= 509,421.05

Y= 497,563.78

H= 4,133.09

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	350	08
150	352	08
210	005	10
270	013	11
330	015	11
390	015	10
500	012	09
650	002	07
800	271	02
950	250	10
1150		
1350		
1550		
1750		
2000		

LAYER MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE	010	10
150	015	09
210	020	09
270	015	09
330	015	09
390	010	09
500	355	08
650	290	07
800	255	14
950	260	15
1150	285	13
1350	305	18
1550	305	24
1750	305	28
2000	295	31

Data obtained from a Double Theodolite  
Tracked pilot-balloon observation.

Data obtained from a Single Theodolite  
Tracked pilot-balloon observation.

TABLE 6

AIMING AND T-TIME COMPUTER MET MESSAGES  
18 January 1984

RITA 0945 MST  
METCM1332062  
181660128879  
00640010 27710879  
01616012 27640868  
02020009 27470842  
03617010 27170801  
04494020 26810752  
05538025 26520705  
06544040 26320661  
07540046 26240619  
08531051 25930580  
09534055 25700543  
10524064 25350508  
11525065 25010475  
12528071 24570428

LANA 1015 MST  
METCM133106  
181730127879  
00640006 27620879  
01622010 27440869  
02623009 27200842  
03519009 26940800  
04479020 26730751  
05538026 26450705  
06548041 26280660  
07539048 26250619  
08531054 26000580  
09527061 25660543  
10522064 25330508  
11523068 25030475  
12527082 24560428  
13530094 23950372  
14519102 23210322  
15514102 22440277  
16505100 21700238

RITA 1100 MST  
METCM1332062  
181800128879  
00640010 27910879  
01639019 27600868  
02415002 27310841  
03544004 26990800  
04497015 26830751  
05553029 26670705  
06546038 26610661  
07530044 26390620  
08529050 26090581  
09524057 25790544  
10522064 25400509  
11524063 25160476  
12529072 24710430

STATION ALTITUDE 9186.79 FEET MSL  
18 JAN. 84  
ASCESSION NO. 1

GEODETIC COORDINATES  
33.18295 LAT DEG  
106.15114 LON DEG

SIGNIFICANT LEVEL DATA  
0180210001  
RITA

TABLE 7

PRESSURE GEOMETRIC ALTITUDE MILLIBARS NSL FEET	TEMPERATURE AIR DEWPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
874.8	3.5	31.0
850.0	1.8	31.0
803.7	-1.5	58.0
759.1	-5.3	44.0
742.6	-5.5	26.0
713.0	-7.7	16.0
700.0	-8.5	15.0
674.4	-9.4	15.0
655.8	-10.7	17.0
628.0	-9.6	14.0
604.3	-12.4	15.0
548.0	-15.9	17.0
531.2	-16.9	19.0
500.0	-20.8	20.0
489.2	-21.8	20.0
465.2	-24.0	20.0
449.2	-25.2	22.0
411.0	-29.6	22.0
400.0	-30.0	22.0
381.6	-32.0	23.0
346.2	-37.3	24.0



STATION ALTITUDE 4106.70 FEET MSL  
10 JAN. 64 0945 HRS MST  
ASCENSION NO. 1

UPPER AIR DATA  
0180210001  
RITA

GEODEIC COORDINATES  
33.18295 LAT DEG  
106.15114 LON DEG

TABLE 8

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND METERS PER SECOND	WIND DIRECTION (DEGREES TRUE)	WIND SPEED KNOTS	INDEX OF REFRACTION
4106.7	870.8	3.5	31.0	1105.5	648.3	360.0	9.9	1.000258
4500.0	860.5	2.9	31.0	1094.9	647.6	359.3	10.1	1.000256
5000.0	852.3	1.9	31.0	1078.3	646.5	358.2	10.3	1.000251
5500.0	836.3	0.8	30.8	1062.1	645.2	357.2	10.5	1.000249
6000.0	820.5	-0.3	40.0	1046.2	644.0	356.2	10.8	1.000248
6500.0	805.1	-1.4	57.2	1030.5	642.7	342.7	9.6	1.000246
7000.0	789.8	-2.7	53.7	1015.9	641.1	343.0	9.0	1.000240
7500.0	774.7	-3.9	49.0	1001.4	639.5	289.6	12.4	1.000235
8000.0	760.0	-5.2	44.3	987.2	638.0	279.9	17.1	1.000230
8500.0	745.4	-5.5	29.0	969.4	637.6	285.3	19.7	1.000222
9000.0	731.0	-6.4	22.1	954.1	636.5	290.3	22.2	1.000217
9500.0	716.4	-7.4	17.3	939.5	635.2	297.4	23.9	1.000213
10000.0	703.0	-8.3	15.2	924.5	634.1	302.8	26.4	1.000209
10500.0	689.3	-8.9	15.0	908.4	633.4	305.4	30.7	1.000205
11000.0	675.4	-9.3	15.0	892.3	632.8	306.4	34.7	1.000201
11500.0	662.7	-10.2	16.3	877.8	631.8	306.2	38.3	1.000198
12000.0	649.7	-10.5	16.4	861.4	631.5	305.6	40.7	1.000194
12500.0	637.0	-10.0	15.0	843.0	632.1	304.9	42.4	1.000190
13000.0	624.6	-10.0	14.1	826.6	632.0	304.0	45.2	1.000186
13500.0	612.3	-11.4	14.7	814.9	630.3	303.2	47.9	1.000184
14000.0	600.3	-12.6	15.1	802.5	628.9	302.3	50.7	1.000181
14500.0	588.3	-13.4	15.5	788.8	628.0	301.5	51.8	1.000178
15000.0	576.7	-14.1	16.0	775.3	627.1	300.7	52.1	1.000175
15500.0	565.2	-14.8	16.4	762.0	626.3	299.8	53.0	1.000172
16000.0	554.0	-15.5	16.8	748.9	625.4	298.9	54.1	1.000169
16500.0	543.0	-16.2	17.6	736.0	624.6	298.1	56.5	1.000166
17000.0	532.1	-16.8	18.9	723.1	623.8	297.2	58.0	1.000163
17500.0	521.4	-18.1	19.3	712.0	622.2	296.2	58.6	1.000160
18000.0	510.8	-19.4	19.6	701.2	620.6	295.4	59.3	1.000158
18500.0	500.5	-20.7	20.0	690.6	619.0	294.8	60.2	1.000155
19000.0	490.3	-21.7	20.0	679.2	617.8	294.9	62.3	1.000153
19500.0	480.2	-22.6	20.0	667.6	616.7	295.1	63.8	1.000150
20000.0	470.4	-23.5	20.0	656.3	615.6	295.4	64.9	1.000147
20500.0	460.7	-24.3	20.6	644.9	614.6	295.7	66.6	1.000145
21000.0	451.2	-25.0	21.7	633.4	613.7	296.0	68.5	1.000142
21500.0	441.8	-26.0	22.0	622.7	612.5	296.4	70.4	1.000140
22000.0	432.5	-27.1	22.0	612.3	611.2	296.8	71.9	1.000137
22500.0	423.5	-28.1	22.0	602.0	609.9	297.3	73.1	1.000135
23000.0	414.7	-29.2	22.0	592.0	608.6	298.2	74.0	1.000133
23500.0	405.9	-29.8	22.0	581.0	607.8	299.6	75.6	1.000130

STATION ALTITUDE 4106.74 FEET MSL  
 10 JAN. 64  
 ACCESSION NO. 1  
 UPPE, AIR DATA  
 0110210001  
 RITA  
 GEODETIC COORDINATES  
 33.16295 LAT DEG  
 106.15114 LONG DEG

TABLE 8 (Cont'd)

GEOMETRIC ALTITUDE, MSL FEET	PRESSURE MILLIBARS	TEMPERATURE		REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND		WIND DATA		INDEX OF REFRACTION
		AIR DEGREES	WETPOINT DEGREES			KNOTS	KNOTS	DIRECTION DEGREES(TN)	SPEED KNOTS	
24000.0	397.4	-30.3	-44.9	22.1	569.9	607.2	300.9	300.9	77.9	1.000128
24500.0	384.9	-31.2	-45.5	22.6	559.9	606.0	302.1	302.1	81.2	1.000125
25000.0	380.7	-32.1	-46.2	23.0	550.2	604.8	302.8	302.8	84.7	1.000123
25500.0	372.5	-33.3	-47.1	23.2	541.0	603.4	303.1	303.1	87.9	1.000121
26000.0	364.5	-34.5	-48.1	23.5	532.0	601.9	302.9	302.9	90.2	1.000119
26500.0	356.6	-35.7	-49.0	23.7	523.2	600.4				1.000117
27000.0	349.8	-36.9	-50.0	23.9	514.5	598.9				1.000115

STATION ALTITUDE 4106.74 FEET MSL  
18 JAN. 84  
ASCE/SIGN NO. 1

MANDATORY LEVELS  
0100210001  
NITA

GEODEIC COORDINATES  
33.18295 LAT DEG  
106.15114 LONG DEG

TABLE 9

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT CENTIGRADE		DIRECTION DEGREES(TN)	SPEED KNOTS
850.0	5068.	1.8	-13.5	31.	350.1	10.3
800.0	6663.	-1.8	-9.2	57.	333.5	9.1
750.0	8333.	-5.4	-18.7	34.	283.7	18.8
700.0	10100.	-8.5	-30.4	15.	303.4	27.3
650.0	11977.	-10.5	-31.1	16.	305.6	40.6
600.0	13907.	-12.7	-33.7	15.	302.3	50.8
550.0	16162.	-15.8	-35.2	17.	298.6	54.9
500.0	18500.	-20.8	-37.8	20.	294.8	60.3
450.0	21032.	-25.1	-40.6	22.	296.1	68.7
400.0	23080.	-30.0	-44.7	22.	300.5	76.8
350.0	26080.	-36.7	-49.8	24.		

STATION ALTITUDE 9173.40 FEET MSL  
10 JAN. 84  
ASCENSION NO. 1

STATION ALTITUDE DATA  
010320001  
LANA

GEODETIC COORDINATES  
33-13510 LAT DEG  
106-15446 LONG DEG

TABLE 10

PRESSURE	GEOMETRIC ALTITUDE	TEMPERATURE AIR	REL. HUM. PERCENT
MILLIBARS	MSL FEET	DEGREES CENTIGRADE	
870.4	9173.4	2.7	62.0
869.1	9085.4	.9	26.0
864.0	9049.9	-.7	30.0
860.3	8949.5	-3.0	39.0
784.9	7010.9	-4.4	44.0
731.6	8953.6	-6.7	19.0
704.0	10000.0	-9.2	15.0
656.0	11694.1	-10.9	14.0
639.0	12304.5	-9.6	15.0
594.5	14044.8	-11.6	15.0
504.0	18496.5	-20.6	19.0
460.4	20490.0	-24.1	20.0
422.4	22530.9	-28.5	21.0
404.4	23419.8	-29.9	21.0
331.6	28131.8	-39.3	23.0
304.0	30362.7	-44.9	
254.0	34296.0	-54.0	
200.0	38907.5	-63.9	

STATION ALTITUDE 4173.44 FEET MSL  
10 JAN. 84  
ASCELSION NO. 1

UPPER AIR DATA  
01R0320001  
LANA

GEODETIC COORDINATES  
33.13510 LAT DEG  
106.15446 LON DEG

TABLE 11

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (DEGREES TRUE)	SPEED KNOTS	INDEX OF REFRACTION
4173.4	879.4	2.7	62.0	1108.4	647.7	360.0	6.0	1.000270
4500.0	860.6	.9	26.1	1103.5	645.1	352.7	6.2	1.000254
5000.0	852.3	-.5	29.5	1088.1	643.5	342.6	6.6	1.000251
5500.0	836.1	-1.7	35.0	1072.3	642.1	333.9	7.2	1.000248
6000.0	820.2	-3.0	36.5	1056.6	640.6	325.9	8.0	1.000245
6500.0	804.6	-3.9	40.1	1040.3	639.5	296.1	9.0	1.000241
7000.0	789.2	-4.4	43.9	1022.1	639.0	276.5	11.8	1.000238
7500.0	774.1	-5.0	37.7	1004.8	638.2	273.0	14.9	1.000232
8000.0	759.2	-5.6	31.3	987.8	637.5	270.9	18.0	1.000227
8500.0	744.6	-6.2	24.8	971.1	636.7	277.9	19.5	1.000221
9000.0	730.3	-6.8	18.8	954.8	635.9	286.2	20.9	1.000216
9500.0	716.1	-7.9	17.1	940.3	634.6	294.4	23.3	1.000213
10000.0	702.2	-9.0	15.3	925.9	633.2	302.1	26.7	1.000209
10500.0	688.5	-9.6	14.7	910.0	632.5	306.6	30.6	1.000205
11000.0	675.0	-10.2	14.4	894.0	631.8	307.3	35.3	1.000201
11500.0	661.9	-10.7	14.1	878.3	631.2	307.5	39.5	1.000198
12000.0	648.9	-10.3	14.4	859.9	631.6	306.6	42.0	1.000194
12500.0	636.2	-9.7	15.0	841.2	632.4	305.6	44.5	1.000190
13000.0	623.8	-10.3	15.0	826.6	631.6	303.6	46.5	1.000186
13500.0	611.5	-10.9	15.0	812.3	630.9	301.7	48.6	1.000183
14000.0	599.6	-11.5	15.0	798.2	630.2	300.1	50.9	1.000180
14500.0	587.6	-12.5	15.4	785.2	629.0	298.6	53.2	1.000177
15000.0	575.8	-13.5	15.9	772.5	627.8	298.0	55.0	1.000174
15500.0	564.3	-14.5	16.3	760.0	626.6	297.5	56.7	1.000171
16000.0	553.0	-15.6	16.8	747.8	625.3	296.7	58.9	1.000168
16500.0	542.0	-16.6	17.2	735.7	624.1	295.8	61.2	1.000166
17000.0	531.2	-17.6	17.7	723.9	622.9	295.1	63.1	1.000163
17500.0	520.5	-18.6	18.1	712.2	621.6	294.6	63.9	1.000160
18000.0	510.1	-19.6	18.6	700.8	620.4	294.0	64.8	1.000157
18500.0	499.9	-20.6	19.0	689.5	619.2	294.1	65.9	1.000155
19000.0	489.7	-21.5	19.3	677.7	618.1	294.3	67.0	1.000152
19500.0	479.7	-22.4	19.5	666.2	617.0	294.4	68.2	1.000150
20000.0	469.8	-23.2	19.8	654.8	615.9	294.7	69.5	1.000147
20500.0	460.2	-24.1	20.0	643.7	614.8	294.9	70.7	1.000144
21000.0	450.6	-25.2	20.2	633.0	613.5	295.4	72.4	1.000142
21500.0	441.3	-26.3	20.5	622.6	612.2	296.0	74.1	1.000140
22000.0	432.1	-27.3	20.7	612.3	610.8	296.6	78.5	1.000137
22500.0	423.1	-28.4	21.0	602.2	609.5	297.3	83.8	1.000135
23000.0	414.2	-29.0	21.0	590.9	608.8	297.8	88.2	1.000132
23500.0	405.5	-29.6	21.0	579.8	608.1	298.1	91.2	1.000130

STATION ALTITUDE 9173.44 FEET MSL  
 18 JAN. 64 1015 HRS MST  
 ASCENSION NO. 1

UPPER AIR DATA  
 0100320001  
 LANA

GEODETIC COORDINATES  
 33.13510 LAT DEG  
 106.15446 LONG DEG

TABLE 11 (Cont'd)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION (TH) SPEED KNOTS	INDEX OF REFRACTION
24000.0	596.9	-30.3	21.1	569.2	607.1	298.4	1.000127
24500.0	580.5	-31.4	21.3	559.5	605.0	298.4	1.000125
25000.0	568.0	-32.5	21.5	550.0	604.4	298.3	1.000123
25500.0	571.0	-33.6	21.8	540.6	603.0	298.0	1.000121
26000.0	563.8	-34.7	22.0	531.4	601.7	297.3	1.000119
26500.0	556.0	-35.7	22.2	522.3	600.3	296.6	1.000117
27000.0	548.5	-36.8	22.5	513.5	598.9	295.6	1.000115
27500.0	540.8	-37.9	22.7	504.7	597.5	294.6	1.000113
28000.0	533.5	-39.0	22.9	496.2	596.1	293.7	1.000111
28500.0	526.2	-40.2	19.2**	487.8	594.6	292.8	1.000109
29000.0	518.9	-41.5	18.0**	479.6	593.0	292.0	1.000107
29500.0	511.0	-42.7	8.9**	471.5	591.4	291.4	1.000105
30000.0	504.9	-44.0	3.7**	463.5	589.7	290.9	1.000103
30500.0	290.1	-45.2		455.6	588.2	290.4	1.000101
31000.0	291.5	-46.4		447.4	586.7	290.0	1.000100
31500.0	284.6	-47.5		439.4	585.2	289.6	1.000098
32000.0	278.1	-48.7		431.6	583.7	289.3	1.000096
32500.0	271.7	-49.8		423.9	582.2	289.1	1.000094
33000.0	265.5	-51.0		416.3	580.7	288.6	1.000093
33500.0	259.4	-52.2		408.9	579.1	288.1	1.000091
34000.0	253.5	-53.3		401.6	577.6	287.4	1.000089
34500.0	247.5	-54.4		394.3	576.1	285.8	1.000088
35000.0	241.6	-55.5		386.8	574.7	284.1	1.000086
35500.0	235.9	-56.6		379.4	573.3	282.2	1.000085
36000.0	230.2	-57.7		372.2	571.9	280.4	1.000083
36500.0	224.7	-58.7		365.1	570.5		1.000081
37000.0	219.3	-59.8		358.2	569.0		1.000080
37500.0	214.1	-60.9		351.4	567.6		1.000078
38000.0	209.0	-62.0		344.7	566.2		1.000077
38500.0	204.0	-63.0		338.2	564.7		1.000075

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE, WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 9173.44 FEET MSL  
 10 JAN. 64  
 ASCENSION NO. 1

MANDATORY LEVELS  
 01A0320001  
 LANA

GEODEIC COORDINATES  
 33.13510 LAT DEG  
 106.15446 LON DEG

TABLE 12

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT	PERCENT	DIRECTION DEGREES(TN)	SPEED KNOTS	
850.0	3066.	-7	-16.1	30.	341.3	6.7	
800.0	6044.	-4.1	-15.3	41.	289.3	9.7	
750.0	8309.	-5.9	-21.8	27.	274.5	19.0	
700.0	10072.	-9.2	-31.0	15.	303.1	27.2	
650.0	11945.	-10.4	-32.4	14.	306.6	41.7	
600.0	13966.	-11.5	-32.9	15.	300.2	50.8	
550.0	16137.	-15.8	-35.3	17.	296.4	59.6	
500.0	18472.	-20.6	-38.1	19.	294.1	65.9	
450.0	21007.	-25.3	-41.4	20.	295.5	72.5	
400.0	23782.	-29.9	-45.1	21.	298.3	93.1	
350.0	26651.	-36.6	-50.3	22.	295.8	97.5	
300.0	30305.	-44.9			290.6	104.2	
250.0	34225.	-54.0			286.5	99.9	
200.0	38018.	-63.9					

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

STATION ALTITUDE 9106.79 FEET MSL  
18 JAN. 84  
ASCENSION NO. 2

SIGNIFICANT LEVEL DATA  
01:021000Z  
RITA

GEOMETRIC COORDINATES  
33.18295 LAT DEG  
106.15114 LON DEG

TABLE 13

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
879.7	4106.7	5.4	-6.4	36.0
874.5	4314.8	3.7	-10.6	21.0
876.2	4445.9	2.5	-17.0	22.0
850.0	5066.7	.4	-15.9	28.0
786.7	7085.8	-4.7	-16.2	40.0
746.5	8440.8	-4.9	-26.8	16.0
700.0	10095.2	-6.9	-29.8	14.0
650.1	11984.7	-7.2	-30.1	14.0
542.7	16541.9	-15.5	-34.9	17.0
500.0	18560.6	-19.3	-37.5	18.0
436.8	21824.5	-25.6	-41.9	20.0
400.0	23910.4	-28.8	-44.6	20.0
370.3	25714.3	-32.3	-47.1	21.0
349.6	27040.8	-35.5	-50.3	20.0



STATION ALTITUDE 4106.74 FEET MSL  
18 JAN. 58  
ASCENSION NO. 2

UPPER AIR DATA  
0100210002  
RITA

GEODETL COORDINATES  
33.18295 LAT DEG  
106.15114 LONG DEG

TABLE 14

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX (F REFRACTION
4106.7	870.7	5.4	36.0	1097.4	650.7	360.0	9.9	1.000260
4500.0	868.4	2.3	22.5	1097.5	646.8	359.8	7.9	1.000253
5000.0	852.1	.6	27.4	1083.5	644.9	359.0	4.7	1.000250
5500.0	830.0	-.7	30.6	1068.1	643.3	354.9	1.4	1.000247
6000.0	820.1	-2.0	33.5	1052.7	641.8	351.3	1.5	1.000244
6500.0	804.6	-3.2	36.5	1037.5	640.3	320.9	3.6	1.000240
7000.0	789.3	-4.5	39.5	1022.6	638.8	280.4	6.8	1.000237
7500.0	774.2	-4.8	32.7	1004.2	638.4	273.7	10.6	1.000231
8000.0	754.3	-4.8	23.8	985.4	638.3	275.6	14.0	1.000225
8500.0	740.8	-5.0	15.9	967.2	638.1	287.3	16.6	1.000219
9000.0	730.4	-5.6	15.3	950.7	637.4	298.9	19.8	1.000215
9500.0	716.4	-6.2	14.7	934.5	636.6	305.7	24.1	1.000211
10000.0	702.6	-6.8	14.1	918.6	635.9	309.8	28.7	1.000207
10500.0	684.8	-7.0	14.0	901.5	635.7	309.3	32.6	1.000204
11000.0	675.7	-7.0	14.0	884.3	635.6	308.7	36.2	1.000200
11500.0	662.6	-7.1	14.0	867.5	635.5	307.7	38.5	1.000196
12000.0	649.8	-7.2	14.0	851.0	635.4	306.0	40.5	1.000192
12500.0	637.1	-8.1	14.3	837.2	634.3	303.7	42.3	1.000189
13000.0	624.6	-9.0	14.7	823.6	633.2	301.5	44.5	1.000186
13500.0	612.3	-10.0	15.0	810.2	632.1	299.6	46.6	1.000183
14000.0	600.3	-10.9	15.3	797.1	631.0	298.6	47.3	1.000180
14500.0	588.5	-11.8	15.7	784.2	629.9	297.6	48.2	1.000177
15000.0	576.9	-12.7	16.0	771.5	628.8	296.4	49.3	1.000174
15500.0	565.6	-13.6	16.3	759.0	627.7	294.1	51.0	1.000171
16000.0	554.5	-14.5	16.6	746.7	626.6	293.6	52.5	1.000168
16500.0	543.6	-15.4	17.0	734.6	625.5	294.3	54.9	1.000165
17000.0	532.7	-16.4	17.2	722.5	624.3	295.7	58.4	1.000163
17500.0	522.8	-17.3	17.5	710.6	623.2	295.0	61.4	1.000160
18000.0	511.5	-18.2	17.7	698.9	622.0	294.4	62.2	1.000157
18500.0	501.2	-19.2	18.0	687.4	620.9	294.1	62.6	1.000155
19000.0	491.0	-20.1	18.3	675.9	619.7	294.2	63.2	1.000152
19500.0	480.9	-21.1	18.6	664.6	618.5	294.7	64.3	1.000149
20000.0	471.1	-22.1	18.9	653.5	617.3	295.4	66.0	1.000147
20500.0	461.4	-23.0	19.2	642.6	616.2	295.8	67.6	1.000144
21000.0	452.0	-24.0	19.5	631.9	615.0	296.0	68.6	1.000142
21500.0	442.7	-25.0	19.8	621.3	613.8	296.1	68.8	1.000139
22000.0	433.6	-25.9	20.0	610.7	612.7	296.7	70.1	1.000137
22500.0	424.5	-26.6	20.0	599.9	611.7	297.6	72.6	1.000134
23000.0	415.7	-27.4	20.0	589.2	610.8	298.5	73.6	1.000132
23500.0	407.8	-28.2	20.0	578.7	609.8	298.9	72.6	1.000130

STATION ALTITUDE 4186.74 FEET MSL  
10 JAN. 89  
ASCENSION NO. 2

UPPER AIR DATA  
0100210002  
RITA

GEODETIC COORDINATES  
33.18295 LAT DEG  
106.15114 LON DEG

TABLE 14 (Cont'd)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TN)	SPEED KNOTS	INDEX OF REFRACTION
24000.0	398.5	-29.0	20.0	568.4	608.6	298.7	72.1	1.000127
24500.0	390.0	-29.9	20.3	558.6	607.6	298.2	78.3	1.000125
25000.0	381.0	-30.9	20.6	549.0	606.4	298.0	85.2	1.000123
25500.0	373.7	-31.9	20.9	539.6	605.1	297.4	86.0	1.000121
26000.0	365.7	-33.0	20.8	530.5	603.8	296.3	90.3	1.000119
26500.0	357.9	-34.2	20.4	521.7	602.2			1.000117
27000.0	350.2	-35.4	20.0	513.1	600.7			1.000115

STATION ALTITUDE 4186.74 FEET MSL  
18 JAN. 84  
ASCENSION NO. 2

MANDATORY LEVELS  
01R0210002  
RITA

GEODETIC COORDINATES  
33.18295 LAT DEG  
106.15114 LON DEG

TABLE 15

PRESSURE GEOPOTENTIAL		TEMPERATURE		REL. HUM.		WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEWPOINT	PERCENT	DIRECTION DEGREES(TN)	SPEED KNOTS	
850.0	5063.	.4	-15.9	28.	358.9	4.2	
800.0	6047.	-3.6	-16.0	37.	303.0	4.2	
750.0	8313.	-4.0	-25.4	18.	281.9	15.7	
700.0	10086.	-6.9	-29.8	14.	309.7	29.4	
650.0	11942.	-7.2	-30.1	14.	306.1	40.4	
600.0	14014.	-10.9	-32.1	15.	298.6	47.3	
550.0	16190.	-14.9	-34.5	17.	293.6	53.1	
500.0	18536.	-19.3	-37.5	18.	294.1	62.7	
450.0	21042.	-24.2	-40.9	20.	296.0	68.6	
400.0	23073.	-28.8	-44.6	20.	298.8	71.1	
350.0	26968.	-35.4	-50.3	20.			

END

FILMED

6-84

DTIC